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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.								
10/527,173	03/07/2005	Peter Francis Carcia	CL2173USPCT	9276								
<div>7590 06/27/2007 Barbara C Siegel E I du Pont de Nemours and Company Legal Patents Wilmington, DE 19805</div>			<div>EXAMINER ESTRADA, MICHELLE</div> <table border="1"><thead><tr><th>ART UNIT</th><th>PAPER NUMBER</th></tr></thead><tbody><tr><td>2823</td><td></td></tr></tbody></table> <table border="1"><thead><tr><th>MAIL DATE</th><th>DELIVERY MODE</th></tr></thead><tbody><tr><td>06/27/2007</td><td>PAPER</td></tr></tbody></table>		ART UNIT	PAPER NUMBER	2823		MAIL DATE	DELIVERY MODE	06/27/2007	PAPER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/527,173

Applicant(s)

CARCIA ET AL.

Examiner

Michelle Estrada

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-22 and 24 is/are rejected.
- 7) ☒ Claim(s) 2-6, 11, 15 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/31/05.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 15 and 23 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only and cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claims 3-6 and 11 are objected to because of the following informalities:

In claim 2, line 1, it appears that "where" should be replaced with --wherein--.

In claim 3, line 1, it appears that "where" should be replaced with --wherein--.

In claim 4, line 1, it appears that "where" should be replaced with --wherein--.

In claim 5, line 1, it appears that "where" should be replaced with --wherein--.

In claim 6, line 1, it appears that "where" should be replaced with --wherein--.

In claim 11, line 1, it appears that "where" should be replaced with --wherein--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Giancaterina et al. (Non-patent literature supplied in the IDS filed 5/31/05).

Re claim 1, Giancaterina et al. disclose a process for depositing undoped transparent oxide semiconductor of zinc oxide, in a field effect transistor, comprising a method of: a) physical vapor deposition of undoped TOS in an effective partial pressure of oxygen mixed with an inert gas (Abstract and page 2, 2nd paragraph).

Re claim 2, Giancaterina et al. disclose wherein the physical vapor deposition is rf magnetron sputtering (abstract).

Re claim 7, Giancaterina et al. disclose wherein deposition is by physical vapor deposition and wherein the inert gas is argon (abstract).

Claims 14-22 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohya et al. (Non-patent literature supplied in the IDS filed 5/31/05).

Re claim 14, Ohya et al. disclose a transistor comprising an undoped transparent oxide semiconductor (Abstract).

Re claim 16, Ohya et al. disclose a flat panel display comprising one or an array of transparent oxide semiconductor transistors as described in claim 14.

Re claim 17, Ohya et al. disclose an active matrix imager comprising an array of transparent oxide semiconductor transistors as described in claim 14.

Re claim 18, Ohya et al. disclose a sensor comprising an array of transparent oxide semiconductor transistors as described in claim 14.

Re claim 19, Ohya et al. disclose a rf price label comprising an array of transparent oxide semiconductor transistors as described in claim 14.

Re claim 20, Ohya et al. disclose an rf identification tag comprising an array of transparent oxide semiconductor transistors as described by Claim 14.

Re claim 21, Ohya et al. disclose an rf inventory tag comprising an array of transparent oxide semiconductor transistors as described by Claim 14.

Re claim 22, Ohya et al. disclose the transistor of Claim 14 deposited on a flexible substrate.

Re claim 24, Ohya et al. disclose the transistor of Claim 22 further comprising a gate dielectric fabricated from zinc oxide.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Konakahara et al. (2002/0037249).

Re claim 1, Konakahara et al. disclose a process for depositing undoped transparent oxide semiconductor of zinc oxide, in a field effect transistor, comprising a method of: a) chemical vapor deposition of undoped TOS in an effective partial pressure of oxygen (Page 1, [0008], [0012], [0074]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giancaterina et al. as applied to claims 1, 2 and 7 above, and further in view of the following comments.

Giancaterina et al. does not specifically disclose the PVD processes of claims 3-6. However, the Examiner takes official notice that all these PVD processes (dc magnetron sputtering, diode sputtering, triode sputtering and ion beam sputtering) are well known in the art at the time of Applicant's invention. Therefore, it would have been within the scope of one of ordinary skill in the art to use any of these processes to deposit an undoped TOS layer.

Re claims 12 and 13, One of ordinary skill in the art would have been led to the recited partial pressure of oxygen through routine experimentation to achieve a desired deposition, structure and characteristics of the TOS layer.

In addition, the selection of partial pressure of oxygen, its obvious because it is a matter of determining optimum process conditions by routine experimentation with a limited number of species of result effective variables. These claims are prima facie obvious without showing that the claimed ranges achieve unexpected results relative to the prior art range. In re Woodruff, 16 USPQ2d 1935, 1937 (Fed. Cir. 1990). See also

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In re Huang, 40 USPQ2d 1685, 1688 (Fed. Cir. 1996)(claimed ranges or a result effective variable, which do not overlap the prior art ranges, are unpatentable unless they produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art). See also In re Boesch, 205 USPQ 215 (CCPA) (discovery of optimum value of result effective variable in known process is ordinarily within skill or art) and In re Aller, 105 USPQ 233 (CCPA 1995) (selection of optimum ranges within prior art general conditions is obvious).

Note that the specification contains no disclosure of either the critical nature of the claimed partial pressure of oxygen or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen partial pressure of oxygen or upon another variable recited in a claim, the Applicant must show that the chosen partial pressure of oxygen are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konakahara et al. as applied to claim 1 above, and further in view of the following comments.

Konakahara et al. does not specifically disclose the CVD processes of claims 8-11. However, the Examiner takes official notice that all these CVD processes (low pressure CVD, plasma-enhanced CVD, laser enhanced CVD and atomic layer CVD) are well known in the art at the time of Applicant's invention. Therefore, it would have

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been within the scope of one of ordinary skill in the art to use any of these processes to deposit an undoped TOS layer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Estrada whose telephone number is 571-272-1858. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2800.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Michelle Estrada
Primary Examiner
Art Unit 2823

ME

June 19, 2007